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(10) **CANADIAN PATENT**

(14) **FAIRWAY SIMULATING MAT**

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Granted to Brunswick Corporation, Chicago, Illinois, U. S. A.

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This invention relates to golf games, and more particularly, to a mat that simulates the lie in the fairway for use in golf games.

Currently, in the game of golf, and particularly in conjunction with driving ranges, golf practice devices and indoor golf games, brush-like mats are used to simulate the lie on the fairway of a golf course. Such mats do not require the degree of maintenance that would be required in maintaining a corresponding lie on actual turf. Additionally, since such mats artificially simulate the lie on a fairway, there is no problem with regard to divots; and as a result, when such mats are used in conjunction with indoor golf games or indoor practice devices, they are capable of providing a suitable simulation without presenting the attendant janitorial problem that would be present due to divots if an actual turf type of lie were to be used.

However, as is apparent to those skilled in the art, the brush-like mats currently in use fail to provide the realism of simulation that is desired. Typically, such mats are formed of a plurality of bristles which support a ball so that a golfer may hit the ball from the bristles. In the constructions heretofore known, the bristles have such an extreme degree of stiffness that they present an abnormal amount of resistance to the passage of a golf club therethrough and thereby fail to realistically simulate the lie on the fairway. That is to say, it is significantly easier to swing a ball through the turf on an actual fairway than it is to swing a club through one of the brush-type mats. The increased resistance of a mat will lessen the distance that the shot travels thereby precluding the golfer from realistically appraising the quality of the shot.

Furthermore, because of the stiffness of the bristles comprising the mats, such mats often mask mistakes that would be obvious if a shot were played on the actual turf. For example,



836395

when a golfer's club strikes the ground considerably behind the ball on the fairway, the resulting interposition of the turf between the club head and the ball may decrease the length of travel of the shot anywhere from about 25 percent to perhaps as much as 95 per cent depending upon the distance behind the ball the club head struck the ground. On the other hand, often when a golfer swings a club such that it encounters the bristles on a mat, a significant distance behind the location of the ball resting thereon, the stiffness of the bristles may cause the club to "skip" along the upper ends of the bristles and guide the club into direct contact with the ball so that the resulting trajectory of the ball will be virtually identical with the trajectory that the ball would have taken had it been cleanly hit save for the effect of decreased club head velocity due to the friction between the bristles and the club head.

As a result, the "feel" of mat is considerably different than that of a fairway and many golfers therefore prefer to avoid practicing fairway shots at all rather than practice fairway shots from one of the mats.

It is, therefore, the principal object of the invention to provide a new and improved mat for simulating the lie in a fairway that has all the advantages of previously known fairway simulating mats and additionally provides a greater degree of simulation of the lie on a fairway.

More specifically, it is an object of the invention to provide a mat for simulating the lie on a fairway of a golf course comprising a means for simulating the grass on a fairway of a golf course, yieldable means supporting the grass simulating means the grass simulating means being constructed to provide resistance

to the passage of a golf club head therethrough on the same order as the resistance provided by actual grass, the yieldable means being fabricated to yield to a golf club head in the same manner as a turf on a golf course, and a rigid backing for the yieldable means.

Another object is the provision of a mat such as that set forth in the preceding paragraph wherein the yieldable means comprises a pad of rubber-like material and a pad of an open-celled foam.

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Yet another object of the invention is the provision of a mat for simulating the lie on a fairway comprised of an artificial grass carpet secured to a pad of rubber-like material and a foam pad secured to and supporting the rubber-like pad.

A still further object is the provision of a mat such as that set forth in the preceding paragraph wherein the rubber-like material has a high hysteresis loss and the foam pad is formed of an open-celled foam.

A still further object of the invention is the provision of a mat such as that set forth in the preceding paragraph wherein the rubber-like material is butyl rubber and is about 1/2 inch thick and the foam pad is about 2-7/8 inches thick.

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Other objects and advantages will become apparent from the following specification taken in conjunction with the accompanying drawing in which:

Fig. 1 is a perspective view of one environment in which a fairway simulating means made according to the invention may be used; and

Fig. 2 is a vertical section of an exemplary embodiment of the fairway simulating means.

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An exemplary embodiment of a fairway simulating means made according to the invention is illustrated in the environment of a tee area, generally designated 10, shown in Fig. 1. Specifically, the fairway simulating means comprises a mat 12 having a

front side 14 and a rear side 16 secured in the tee area such that the front side 14 faces the intended direction of flight of a shot struck from the tee area 10 as represented by an arrow 18.

A ball 20 rests on the mat 12 so that it may be hit by a golfer 22 swinging a golf club 24 to provide impetus to the golf ball 20 in the general direction of the arrow 18.

Turning now to Fig. 2, the specific construction of the mat 12 will be described. The mat 12 includes a rigid base 26 which may be formed of three-quarter inch plywood or the like and is secured in the tee area 10 by any suitable means such as screws (not shown) or by nesting the mat in a depression having dimensions generally similar to those of the mat 12.

Secured to the upper side of the base 26 by means of a suitable adhesive or the like is a foam pad 28. In an exemplary embodiment of the invention, the pad 28 is formed of an open-celled, medium density polyetherurethane foam such as that marketed by the General Tire and Rubber Company by registered trade mark "POLYFOAM P-55" and may have a thickness of about 2-7/8 inches.

The foam pad 28 in turn supports a rubber-like pad or sheet 30. Any suitable adhesive may be used to secure the rubber-like pad 30 to the foam pad 28. In the exemplary embodiment of the invention, the rubber-like pad 30 is about 1/2 inch thick and is formed of a butyl rubber composition that has a high hysteresis loss. Specifically, a composition of butyl rubber such as that disclosed in the copending Canadian application, Serial Number 957,521, filed April 10, 1967, provides good results.

The rubber-like pad 30 in turn supports conventional artificial grass carpeting 32 which is similar to the artificial grass construction currently in use in indoor athletic stadiums. In the exemplary embodiment of the invention, the artificial grass carpeting is formed from polypropylene ribbon grass using ribbons

having a length of about 11/16 inch on a nylon cloth base and which offers a resistance to the passage of a club head there-through that is on the same order as the resistance offered by actual grass.

In some instances, it may be necessary to rigidify the artificial grass carpeting so that it will better withstand the impact of a golf club. In such a case, it is only necessary to secure the artificial grass carpeting to a relatively thin neoprene rubber sheet rather than directly to the butyl rubber pad 30 and, by means of a suitable adhesive, secure the neoprene rubber sheet to the butyl rubber pad 30.

From the foregoing description of the manner in which the mat 12 is fabricated, it will be appreciated that the artificial grass carpeting 32 will both aesthetically and physically simulate the grass on the fairway of a golf course. The supporting structure including the foam pad 28 and the butyl rubber pad 30 provide a yieldable support for the artificial grass carpeting 32 that realistically simulates the yieldability of the turf on an actual fairway.

In this respect, it will be observed that because of the high hysteresis loss of the butyl rubber pad 30 the structure is not extremely resilient and therefore will absorb kinetic energy of the golf club in a manner similar to the actual turf on a golf course. However, the resilience of the foam pad 28 and the butyl rubber pad 30 is sufficient so as to preclude a golf club from forming depressions in the mat 12 that are relatively long lasting and which would render the upper surface of the mat uneven for substantial time periods.

Because the structure yields almost identically to actual turf, it will be apparent that it will not offer an increased resistance to the passage of the club head as is the case with currently existing brush-type mats. Furthermore, because the structure may be depressed, it will be apparent that the club head

836395

cannot "skip" along the upper surface of the mat 12 to mask errors in the golfer's swing as is the case with brush-type mats. Because of these factors, the mat provides for truly realistic simulation of the lie on a fairway of a golf course. Finally, it will be appreciated that a mat made according to the invention retains the advantages of being maintenance free and will not cause a janitorial problem insofar as divots are concerned.

Having described specific embodiments of our invention for exemplification purposes, we do not wish to be limited to the
10 specific construction set forth, but rather, to have our invention construed according to the following claims.

836395

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A mat for simulating the lie on the fairway comprising: an artificial grass carpet comprising a base with ribbons projecting upwardly therefrom secured to a sheet of rubber-like material and a foam pad secured to and supporting said sheet.
2. The invention of Claim 1 wherein said rubber-like material has a high hysteresis loss.
3. The invention of Claim 1 wherein said foam pad is formed of an open-celled foam.
4. The invention of Claim 1 wherein said sheet is formed of a butyl rubber composition having a high hysteresis loss and is about 1/2 inch thick; said pad is formed of an open-celled foam and is about 2-7/8 inches thick; and a rigid support for said pad.



Fig. 1.

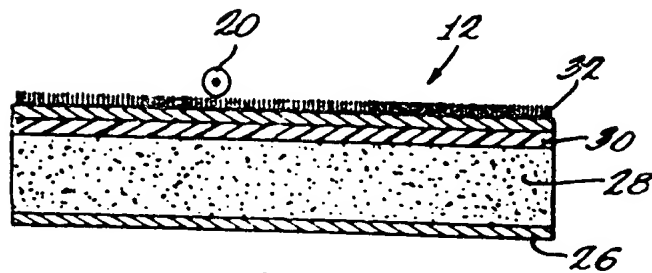
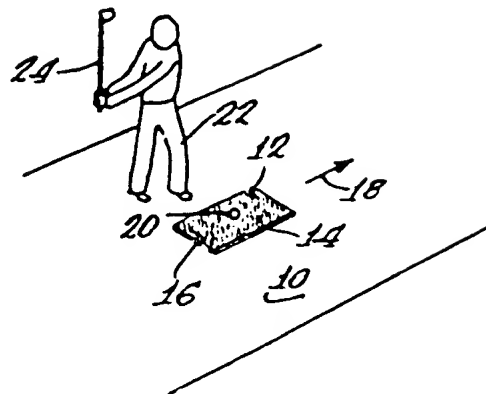


Fig. 2.